

THE GENUS *ANOPLOSIAGUM* BLANCHARD
(COLEOPTERA: SCARABAEIDAE) IN CUBA.
PART I. DESCRIPTIONS OF FIVE NEW SPECIES

MIGUEL GARCIA-VIDAL

351 Grove Street, #1, San Francisco, California 94102

The subfamily Melolonthinae has only two genera reported from Cuba: *Anoplosiagum* and *Phyllophaga*. I have been working on the latter for several years (Garcia-Vidal, 1975, 1978). At the request of some Cuban parasitologists I began to work on *Anoplosiagum*, since this genus was found as a host for some parasites.

The first writer to describe a Cuban species of *Anoplosiagum* was E. Blanchard, who published his catalogue of the entomological collections of the Paris Museum in 1850 (Chapin, 1932). Blanchard established this genus for four species, three from Brazil and the other (*A. pallidum*) from Cuba. In 1865, Chevrolat described another (*A. variabile*). E. Chapin described six more (*A. flavicolle*, *A. peltatum*, *A. rufum*, *A. scabrosum*, *A. scaramuzzai*, and *A. simplicipes*) and redescribed another species (*A. rutilus*) that originally was placed in the genus *Clavipalpus* (Chapin, 1932).

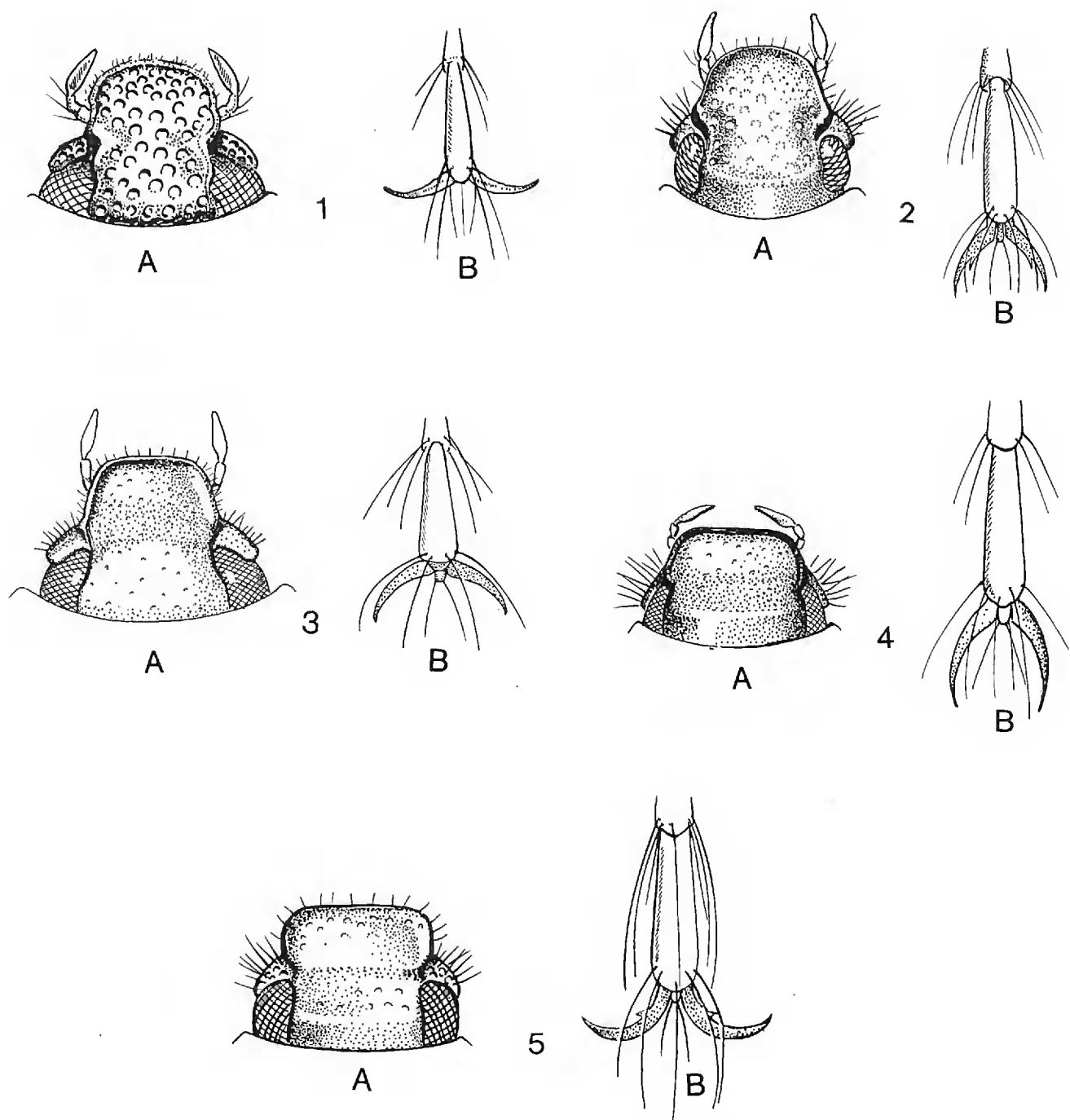
During my research I found specimens that did not fit the descriptions of the previously described species of *Anoplosiagum*. The principal differences were in the claws, the clypeus, and the male genitalia. Figures of these distinguishing characters are presented in this paper.

Until now, only nine species have been reported from Cuba (Blackwelder, 1944). Adding the present five the total number of species of *Anoplosiagum* from Cuba grows to fourteen.

The figures of the male genitalia were drawn by the author. I wish to sincerely thank Heriberto Maza who made the figures of the claws and heads and Ing. Fernando de Zayas who lent me the specimens from his collection for my studies. Acronyms used in this paper: FZC—Fernando de Zayas Collection, Havana; CAS—California Academy of Sciences, San Francisco.

***Anoplosiagum cubensis* Garcia-Vidal, new species**
(Figs. 5, 7)

Shining. Elytra testaceous; underparts, legs testaceous to yellowish-brown; head castaneous; disc of pronotum with piceous spot which extends to head (as *A. turquinensis*); posterior, lateral margins yellowish-brown. Clypeus densely punctured; anterior margin slightly, narrowly reflexed; clypeo-frontal suture obliterate. Frons flat except medially, base punctate; punctures as on



Figs. 1-5. Heads (A) and claws (B) of *Anoplosiagum* spp. Fig. 1. *A. zayasi*. Fig. 2. *A. turquinensis*. Fig. 3. *A. swezeyi*. Fig. 4. *A. oteroi*. Fig. 5. *A. cubensis*.

clypeus. Head pubescent with thick hairs. Pronotum rather sparsely punctured; punctures smaller than those of head, with thick, long, straight hair mainly on lateral margins; anterior, basal margins entire; sides broadly dilated medially; lateral margins finely denticulate; anterior angles slightly acute, basal obtuse. Scutellum triangular, punctures as on elytra. Elytra more densely punctured than pronotum but less than head; punctures smaller than those of pronotum; sutural margins tumid but only slightly elevated, with some punctures. Pygidium punctured as pronotum, with long, straight hairs; apex broadly rounded. Antennal club 3-segmented, about as long as stem.

Upper tooth of protibia obsolete. Coxal plates with thick, straight hairs. Sternites densely, regularly punctured; punctures shallow, with long, straight, fine hairs. Urosternites less densely punctured than sternites; sparsely pubescent. Longer calcar of metatibia slender, acuminate, about as long as first tarsal segment. Claws slightly curved, with split near base. Length, 8–9 mm.

Holotype.—Male, Matanzas, Central CUBA, June 12, 1940 (Scaramuzza) (FZC).

Paratypes.—Five with same data as holotype (3, FZC; 2, CAS).

This species is similar in color to *A. peltatum*, but the spot on the pronotum is more irregular, with its sides not well defined. In addition the claws of *A. peltatum* are stout, bent, and split near middle and the upper tooth of the protibia is present. It is a smaller species.

Anoplosiagum oteroi Garcia-Vidal, new species

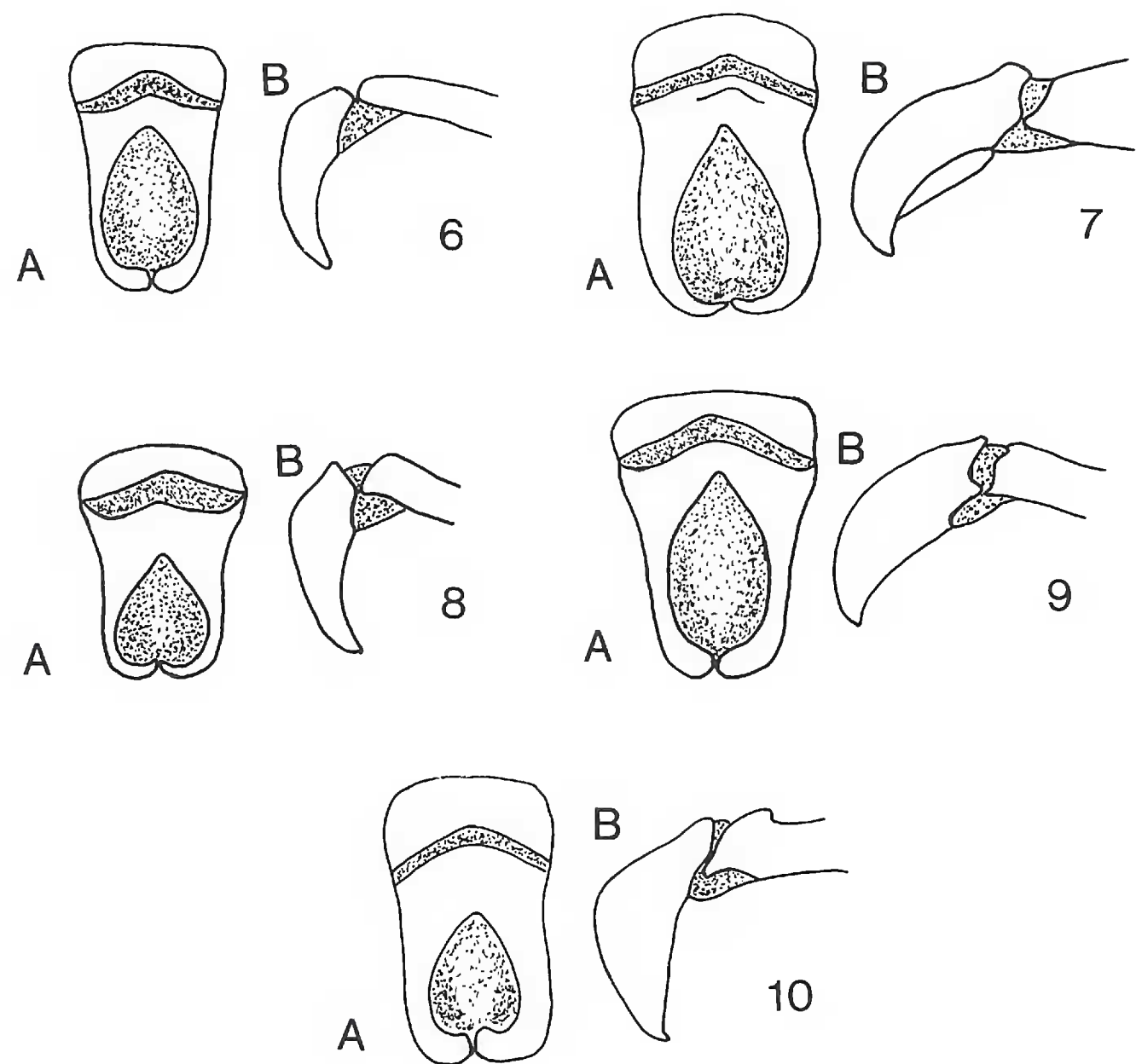
(Figs. 4, 8)

Shining. Disc of elytra, sides, basal margins of pronotum, anterior margin of clypeus yellowish-brown; sides of elytra, disc of pronotum, frons, posterior half of clypeus, underparts piceous; legs variegated. Frons densely, coarsely punctured, flat except at base, where it is impunctate; clypeo-frontal suture obliterated. Clypeus less densely, more regularly punctured than frons; margins narrowly reflexed. Pronotum less densely, more regularly punctured than head; anterior, basal margins entire; lateral margins finely denticulate; sides broadly dilated medially; anterior angles slightly acute; posterior obtuse; with spot, as in *A. peltatum* which continues to frons. Scutellum castaneous, sparsely punctured. Elytra slightly less punctured than pronotum; sutural margins slightly tumid; lateral, posterior margins bearing long, straight hairs. Pygidium castaneous, coarsely punctured, apex broadly rounded. Antennal club 3-segmented, about as long as stem. Protibia tridentate; upper tooth very weakly developed, distal very long. Coxal plates bearing thick, long, straight hairs. Sternites densely punctured; punctures fine, from which arise fine, long, straight hairs. Urosternites with sides yellowish-brown, less densely punctured than sternites. Longer calcar of metatibia acuminate, longer than first tarsal segment. Claws little curved, without split. Length, 6–8 mm.

Holotype.—Male, Estacion Experimental Agronomica, Finca Coca, Prov. Habana, CUBA, May 1961 (I. Garcia) (FZC).

Paratypes.—Two, Santiago de las Vegas, CUBA, May 20, 1933 (A. Otero), with a label from Estacion Experimental Agronomica, Cuba, Ento. No. 10111 (FZC); one, Santiago de las Vegas, CUBA, May 20, 1933 (A. Otero), with a label "Abundant in pasture fields," Estacion Experimental Agronomica, Cuba, Ento. No. 10111 (FCZ). Four with same data as holotype (2, FZC; 2, CAS).

This species is dedicated to A. Otero, who worked in the Entomology



Figs. 6–10. Male genitalia of *Anoplosiagum* spp., frontal view (A) and lateral view (B). Fig. 6. *A. zayasi*. Fig. 7. *A. cubensis*. Fig. 8. *A. oteroi*. Fig. 9. *A. swezeyi*. Fig. 10. *A. turquinensis*.

Department of the formerly Estacion Experimental Agronomica, Santiago de las Vegas, Habana, for many years.

***Anoplosiagum swezeyi* Garcia-Vidal, new species**
(Figs. 3, 9)

Elytra, head castaneous; pronotum castaneous with yellowish-brown band on both sides; underparts, legs yellowish-brown. Head densely, coarsely punctured with irregular punctures, absent at base, with thick, short, straight hairs; clypeo-frontal suture obliterate; margins of clypeus abruptly reflexed. Pronotum sparsely punctured; punctures shallow; anterior, basal margins entire; sides dilated a little before subangulated middle; lateral margins finely

denticulate, with thick, long, reflexed hairs. Scutellum with punctures present laterally, absent on disc. Elytra more densely punctured than pronotum, but less than head; punctures deeper, bigger than those of pronotum; sutural margins slightly tumid; lateral, posterior margins with short, thick, bent hairs. Pygidium pubescent, with thick, long, straight hairs; apex broadly rounded. Antennal club 3-segmented, about as long as four preceding segments combined. Upper tooth of protibia almost obsolete; median rather acute, distal long, acuminate. Coxal plates with long, thick hairs. Sternites densely punctured with punctures fine, shallow, regularly distributed, from which arise fine, short hairs. Urosternites punctured about as sternites; fifth segment laterally bearing a tuft of long, fine hairs. Longer calcar of metatibia acuminate, about as long as first tarsal segment with its apical spines. Claws little curved; without split. Length, 6–9 mm.

Holotype.—Male, Las Martinas, Pinar del Rio, CUBA, June 24, 1940 (J. Acuna) (FZC).

Paratypes.—One, Las Martinas, Pinar del Rio, CUBA, June 24, 1940 (J. Acuna) (CAS); one, San Julian, Pinar del Rio, CUBA, January 8, 1938 (J. Acuna), with a label from Estacion Experimental Agronomica, Cuba, Ento. No. 10972 (FZC).

This species is dedicated to Dr. Sean Swezey, University of California at Berkeley.

Anoplosiagum turquinensis Garcia-Vidal, new species
(Figs. 2, 10)

Very narrowly oval, long, shining; yellowish-brown to castaneous; with two rather long piceous spots on pronotum; sutural margins from yellowish-brown to piceous. Frons densely, coarsely punctured; punctures irregular; with a depression on each side of the median line; impunctate toward base and sides, which are darker than disc; clypeo-frontal suture obliterated. Clypeus colored as disc of frons, similarly punctured, but punctures more regular; margin abruptly reflexed. Pronotum less densely punctured than head; punctures smaller but more regularly distributed; spots on both sides of median line of disc; margins entire; sides dilated, rounded at middle; with long, thick hairs on lateral margins. Scutellum almost triangular, with punctures toward margins; same color as sutural margins. Elytra more densely punctured than pronotum but less than head; punctures rather bigger; sutural margins tumid; lateral, posterior margins bearing long, thick, straight hairs. Pygidium sparsely punctured; punctures fine; some fine hairs, mainly on margins; apex broadly rounded. Protibia tridentate; upper tooth tiny; teeth almost equidistant. Antennal club 3-segmented, about as long as stem. Coxal plates with thick, long, straight hairs arising from fine punctures. Urosternites less densely punctured than sternites, but with similar punctures; some fine hairs. Longer calcar of metatibia acuminate, longer than first tarsal segment. Claws little curved, split medially. Length, 7.5–9 mm.

Holotype.—Male, Pico Turquino, Sierra Maestra, Oriente, CUBA, June 1963 (F. de Zayas) (FZC).

Paratypes.—Three with same data as holotype (FZC). Two, Pico Turquino, CUBA, 3750 feet altitude, June 10–29, 1930 (J. Acuna) (FZC); one, Palma Mocha to Pico Joaquin, Sierra Maestra, CUBA, May 18, 1948, 3900–6300 feet altitude (collector unknown); one, Pico Turquino, CUBA, July 29, 1922, 4500–5000 feet altitude (S. C. Bruner and C. H. Ballou) (CAS).

Anoplosiagum zayasi Garcia-Vidal, new species
(Figs. 1, 6)

Shining. Head piceous; pronotum yellowish-brown; sides of elytra castaneous; disc, underpart, legs yellowish-brown. Head densely, coarsely punctured; punctures irregular, absent at base; clypeo-frontal suture obliterated. Pronotum less densely but more regularly punctured than head; punctures shallow, more regular in shape; anterior, basal margins entire; sides medially, broadly dilated; lateral margins finely denticulate; anterior angles almost right, basal obtuse. Scutellum colored as pronotum, with punctures toward margins. Elytra more densely punctured than pronotum but less than head; punctures bigger, deeper; sutural margins conspicuous but not elevated; lateral, posterior margins bearing thick, straight hairs. Pygidium densely, coarsely punctured; apex broadly rounded. Antennal club 4-segmented about as long as rest of segments. Upper tooth of protibia obsolete; distal very long. Coxal plates with thick, long hairs. Sternites pubescent, with fine, long, straight hairs, arising from fine punctures. Urosternites less pubescent than sternites. Longer calcar of metatibia slender, acuminate, longer than first segment. Claws gently curved, without split. Length, 6–7 mm.

Holotype.—Male, La Glorieta, Guantanamo, Prov. Oriente, CUBA, June 1959 (F. de Zayas) (FZC).

Paratypes.—Four with same data as holotype (2, FZC; 2, CAS).

This species is characterized by its 4-segmented antennal club and the absence of the upper tooth of the protibia. It is dedicated to my friend and professor Ing. Fernando de Zayas.

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